SIGNAMAX
CONNECTIVITY SYSTEMS

Signamax™ Connectivity Systems
10/100BaseT/TX to 100BaseFX
Industrial PoE Converter Series

USER'S GUIDE

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User's Guide

FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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Trademarks

Product names mentioned in this manual may be trademarks or registered trademarks of those products and are hereby acknowledged.

- Ethernet is a trademark of Xerox Corporation.
- Microsoft Windows is a trademark of Microsoft Corporation.
- Signamax™ is a trademark of Advanced Electronic Support Products, Inc.

Preface

This manual describes how to install and use the Signamax™ Industrial PoE Media Converter. The Signamax™ Industrial PoE Media Converter introduced here provides one channel media conversion between 10/100BaseT/TX and 100BaseFX.

A member of the growing family of Industrial Media Converters, this Industrial PoE Media Converter addresses a need for a Power over Ethernet (PoE) Media Converter. Capable of operating at temperature extremes of 14°F to +140°F (-10°C to +60°C), this is the Media Converter of choice for harsh environments.

The 10/100BaseT/TX port on this Media Converter supports IEEE802.3af Power over Ethernet (PoE) Power Sourcing Equipment (PSE) and can detect an IEEE802.3af compliant Powered Device (PD). Using external 48~52VDC power inputs through Terminal Block or Power Jack, data and power can be transmitted to a Powered Device (PD) over the same twisted-pair Ethernet cable through 10/100BaseT/TX port on the Media Converter.

Or the 10/100BaseT/TX port on this Media Converter supports 30W High Power PoE Power Sourcing Equipment (PSE) and can detect a 30W High Power PoE compliant Powered Device (PD). Using external 52~57VDC power inputs through Terminal Block or Power Jack, data and power can be transmitted to a Powered Device (PD) over the same twisted-pair Ethernet cable through 10/100BaseT/TX port on the Media Converter.

The Signamax™ Industrial PoE Media Converter fully complies with IEEE802.3 10BaseT and IEEE802.3u 100BaseTX/FX standards.

In this manual, you will find:

- Product overview
- Features on the media converter
- Illustrative LED functions
- Installation instructions
- Specifications

Table of Contents

FCC Warning 1

CE Mark Warning 1

Trademarks 1

Preface 2

Table of Contents 4

Product Overview 5

Industrial PoE Media Converter 5
Packing Contents 5
Product Highlights 6
Front Panel Display 7
Physical Ports 8

Installation 9

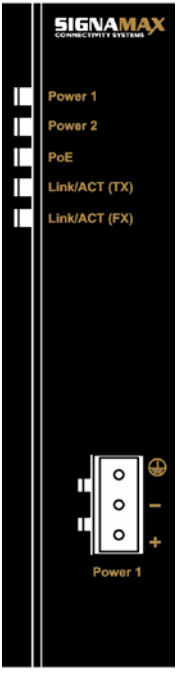
Selecting a Site for the Equipment 9
Wiring Diagram 9
DIN Rail Mounting 10
Connecting to Power 10
DIP Switch 11
Connecting to Your Network 12

Specifications 13

Contact Information 14

Product Overview

Industrial PoE Media Converter



Packing Contents

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

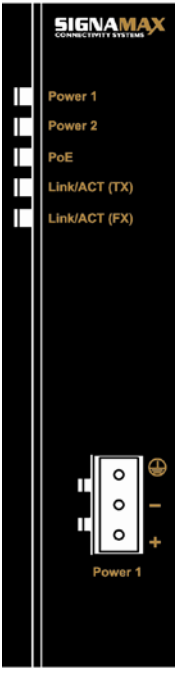
- The Media Converter
- User's Manual
- External Power Adaptor & Power Cord (optional)

Product Highlights

Basic Features

- Meets EN61000-6-2 & EN61000-6-4 EMC Generic Standard Immunity for industrial environment.
- Supports IEEE802.3af Power over Ethernet (PoE) Power Sourcing Equipment (PSE) or supports 30W High Power PoE Power Sourcing Equipment (PSE).
- DIP Switch configuration for “Link Fault Signaling”, speed, duplex mode.
- Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, Full/Half-duplex, Auto-Negotiation, Auto MDI/MDIX.
- 100BaseFX: Multi/Single mode SC or ST type, 100BaseBX: WDM Multi/Single mode SC type.
- Supports 1024 MAC addresses. Provides 2.25M bits buffer memory.
- Power Supplies: Redundant 48VDC or -48VDC Terminal Block power input and 48VDC DC JACK with 100-240VAC external power supply.
- Field Wiring Terminal Markings: Use Copper Conductors Only, 140/167℉ (60/75℃), wire range 12-24 AWG, torque value 7 lb-in.
- Operating voltage and Max. current consumption: 0.075A @ 48VDC. Power consumption: 3.6W Max.
- Supports up to 15.4W: Redundant 48 to 52VDC Terminal Block power input and 48 to 52VDC DC JACK.
- Operating voltage and Max. current consumption when PoE link with 15.4W IEEE802.3af PD: 0.4A @ 48VDC. Power consumption: 19.2W Max.
- Supports up to 30W: Redundant 52 to 57VDC Terminal Block power input and 52 to 57VDC DC JACK.
- Operating voltage and Max. current consumption when PoE link with 30W High Power PD: 0.62A @ 55VDC. Power consumption: 34.1W Max.
- For use in Pollution Degree 2 Environment.
- Supports DIN-Rail, Panel, or Wall Mounting installation.

Front Panel Display



Status LEDs

LEDs	State	Indication
Power over Ethernet (PoE)		
PoE	Steady	Powered Device (PD) is connected.
	Off	Powered Device (PD) is disconnected.
10/100BaseT/TX, 100BaseFX/BX		
Link/ACT	Steady	A valid network connection established.
	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.

Physical Ports

This Media Converter provides:
One 10/100BaseT/TX port + one 100BaseFX/BX port

Connectivity
- RJ-45 connectors.
- SC or ST connector on 100BaseFX fiber port.
- SC connector on 100BaseBX fiber port.

Installation

This chapter gives step-by-step installation instructions for the Converter.

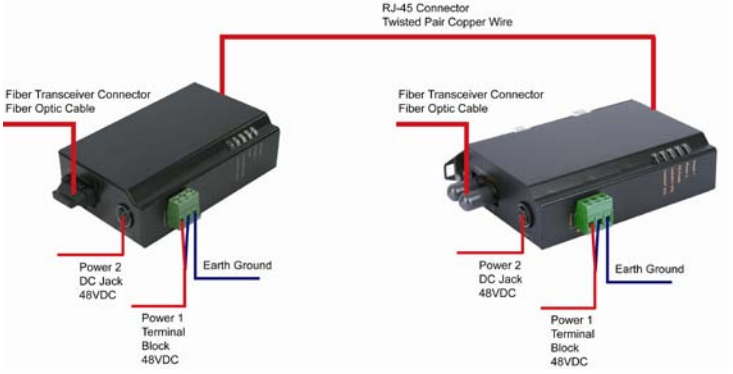
Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The ambient temperature should be between 14 and 140 degrees Fahrenheit (-10 to 60 degrees Celsius).
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the equipment.
- The power outlet should be within 1.8 meters of the product.

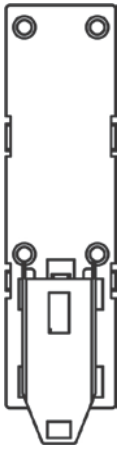
Wiring Diagram

Field Wiring Terminal Markings: Use Copper Conductors Only, 140/167°F (60/75°C), wire range 12-24 AWG, torque value 7 lb-in.



DIN Rail Mounting

- Fix the DIN rail attachment plate to the back panel of the Media Converter.
- Installation: Place the Media Converter on the DIN rail from above using the slot. Push the front of the Media Converter toward the mounting surface until it audibly snaps into place.
- Removal: Pull out the lower edge and then remove the Media Converter from the DIN rail.



Connecting to Power

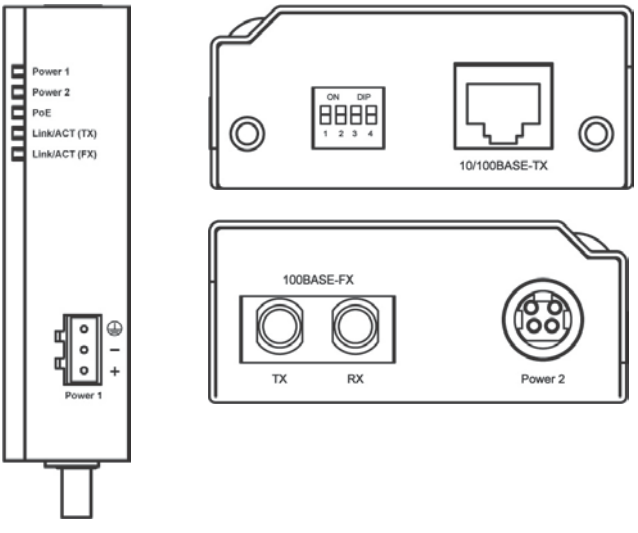
Redundant DC Terminal Block Power Input and DC Jack:

DC Terminal Block Power Input

- Connect the DC power cord to the plug-able terminal block on the Media Converter, and then plug it into a standard DC outlet.
- Disconnect the power cord if you want to shut down the Media Converter.

DC Jack

- Connect the supplied AC to DC power adapter to the receptacle on the Media Converter.
- Connect the power cord to the AC to DC power adapter and attach the plug into a standard AC outlet with the appropriate AC voltage.



Power Input Assignment (30W High Power PoE model)			
Power 1	+	48~52VDC for 15.4W 52~57VDC for 30W	Terminal Block
	−	Power Ground	
⏚		Earth Ground	
Power 2		48~52VDC for 15.4W 52~57VDC for 30W	DC Jack

DIP Switch

There are four pins on the DIP switch for port settings. Refer to the table below for more details.

DIP Switch	On	Off
1	Enable forced mode for 10/100BaseT/TX port	Enable auto negotiation for 10/100BaseT/TX
2	10/100BaseT/TX port forced to 10Mbps	10/100BaseT/TX port forced to 100Mbps
3	10/100BaseT/TX port forced to half duplex mode	10/100BaseT/TX port forced to full duplex mode
4	Enable Link Fault Signaling	Disable Link Fault Signaling

Connecting to Your Network

Cable Type & Length

It is necessary to follow the cable specifications below when connecting the Media Converter to your network. Use appropriate cables that meet your speed and cabling requirements.

Cable Specifications

Speed	Connector	Port Speed Half/Full Duplex	Cable	Max. Distance
10BaseT	RJ-45	10/20 Mbps	2-pair UTP/STP Cat. 3, 4, 5	100 m
100BaseTX	RJ-45	100/200 Mbps	2-pair UTP/STP Cat. 5	100 m
100BaseFX	SC, ST	200 Mbps	MMF (50 or 62.5μm)	2 km
100BaseFX	SC, ST	200 Mbps	SMF (9 or 10μm)	20, 40, or 75 km
100BaseBX	SC	200 Mbps	MMF (50 or 62.5μm)	2 or 5 km
100BaseFX	SC	200 Mbps	SMF (9 or 10μm)	20 or 40 km

Cabling

- First, ensure the power of the Media Converter and end devices are turned off.

<Note> Always ensure that the power is off before any installation.

- Prepare cable with corresponding connectors for each type of port in use.
- Consult the previous section for cabling requirements based on connectors and speed.
- Connect one end of the cable to the Media Converter and the other end to a desired device.
- Once the connections between two end devices are made successfully, turn on the power and the Media Converter is operational.

Specifications

Industrial PoE Media Converter	10/100BaseT/TX auto-negotiating port with RJ-45 connector, 100BaseFX/BX fiber port
Applicable Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX/FX
Switching Method	Store-and-Forward
Forwarding Rate 10BaseT: 100BaseTX: 100BaseFX/BX:	 10 / 20Mbps half / full-duplex 100 / 200Mbps half / full-duplex 200Mbps full-duplex
Performance	14,880pps for 10Mbps 148,810pps for 100Mbps
Cable 10BaseT: 100BaseTX: 100BaseFX/BX:	 4-pair UTP/STP Cat. 3, 4, 5 4-pair UTP/STP Cat. 5 Up to 328ft (100m) MMF (50 or 62.5μm), SMF (9 or 10μm)
LED Indicators	Per unit – Power status (Power 1, Power 2) PoE status (PoE) Per port – 10/100TX or 100FX/BX - Link/ACT
Dimensions	2.76" (W) × 4.33" (D) × 1.18" (H) (70mm (W) × 110mm (D) × 30mm (H))
Net Weight	0.55lb. (0.25Kg)
Power Consumption	3.6W Max.
Operating Voltage & Max. Current Consumption	0.075A @ 48VDC
Power	Supports up to 15.4W: 48~52VDC Supports up to 30W: 52~57VDC
Operating Voltage & Max. Current Consumption	When PoE link with 15.4W IEEE802.3af PD: 0.4A @ 48VDC When PoE link with 30W High Power PD: 0.62A @ 55VDC
Power Consumption	When PoE link with 15.4W IEEE802.3af PD: 19.2W Max. When PoE link with 30W High Power PD: 34.1W Max.
Operating Temperature	14℉ to 140℉ (-10℃ to 60℃)
Storage Temperature	-40℉ to 185℉ (-40℃ to 85℃)
Humidity	5%-95% non-condensing
Safety	UL508

Contact Information

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